

SPECIAL PLANT SURVEY FORM



SURVEYOR INFORMATION

Survey date: <u>2009-08-11</u>	Time from: <u>11:30^{am}</u> to: <u>1:00</u> am or <u>pm</u> (circle) <u>EDT</u>	Sourcecode: F _____ MIUS
Surveyors (principal surveyor first, include first & last name): <u>Steven Gorske and Chauncey Moran</u>		
Weather conditions: <u>sunny and warm</u>		
Revisit to this EO needed? <u>X</u> yes ___ no Why?: <u>If planned industrial haul road is built, it could damage or destroy this population.</u>		

ELEMENT INFORMATION

Scientific name: <u>Myriophyllum Farwellii Morong</u>	Data sensitive? <u>(Y)</u> N	EOID: _____	Occ.# (if known): _____
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FILING

SURVEYSITE: _____	SITENAME: _____
QUADCODE: _____	QUADNAME: _____

LOCATIONAL INFORMATION

Was the Landowner contacted? Yes _____ No <u>X</u> Landowner Name: <u>Plum Creek Timber Co.</u>	
Owner Type: <u>Timber / land development</u> Note: <u>Commercial Forest land, open to the public</u>	
DIRECTIONS: Provide detailed directions to the observation (rather than the survey site). Include landmarks, roads, towns, distances, compass directions. <u>From the town of Humboldt, follow the Wolf Lake Road and subsequent roads ± north roughly 18-20 miles, past Brackley Lake, the Dead River and Wildcat Canyon Creek (west of Silver Lake Basin). Continue north about 2 miles, until the 2-track road becomes impassible to vehicles. Walk about 0.5-1.0 mile north to the Pulligan Creek crossing. The population is in the pool just east of the road.</u>	
Township/Range/Section <u>T50 N, R29 W, SW 1/4 SE 1/4 NW 1/4 Section 26.</u>	
County <u>Marquette</u>	Managed area name: _____
Was GPS used? Yes <u>X</u> No _____	Type of unit <u>Magellan Sportrac Pro</u> Unit number _____
Waypoint name/# (when using Garmin) _____	File name (when using Trimble) _____
OPTIONAL: Latitude <u>46.70139 N</u>	Longitude <u>87.90163</u> (<u>WGS 1984</u>)

FEATURE INFORMATION (mandatory)

Point: <12.5 m in both dimensions, Line: >12.5 m in one dimension, Polygon: >12.5m in both dimensions

Source Feature: (Single Source EO) Multi-Source EO _____ Conceptual Feature Type: Point _____ Line _____ (Polygon)

TOPOGRAPHIC MAP (mandatory, the website topozone.com can be used as a source for these maps)

1. Attach a photocopy of the appropriate part of a USGS topographic map (1:24,000 scale if available) and write the map scale on the photocopy. Please do NOT enlarge or reduce the map.
2. Indicate on the map the exact location of the observation(s):
 - a. When the observed area is **no larger than a pen point** on the map (i.e., only a small number of individuals or extremely small patches), place small points on the map indicating the location(s) of the individuals or patches, and label each point with an arrow so they are more easily seen.
 - b. When the observed area is **larger than a pen point** on the map, (e.g., a population of plants, foraging birds):
 - (1) Draw a thin solid boundary line showing the extent of the observed area occupied by the individuals.
 - (2) Indicate disjunct patches (polygons) by drawing the boundary for each patch separately.
 - (3) If the boundary follows the edge of a lake, stream, road, marsh or other feature, draw the boundary precisely on the edge of the feature.
 - (4) Where needed, add notes to the map with instructions on where the boundary line is located or if the boundary is shared with other observations.
3. A hand drawn sketch may be included for finer details.

LOCATIONAL CERTAINTY

Is your depiction of the observed area on the map within 6.25 m (approximately 20ft) of its actual location on the ground? (Y) N

If N, complete the following:

- a. Estimate of uncertainty distance: based on landmarks, elevation, etc., the location of the observed area on the map is accurate to within _____ meters kilometers feet miles of its actual location on the ground.
 - b. Is the observed area known to be located within some feature(s) on the map (e.g., wetland boundary, lake, road, trail, highway, contour lines)? (Y) N
- If Y, indicate the boundary within which the observed area is known to be located on the map line, and if applicable, identify the feature (e.g., marsh).

IDENTIFICATION

(soon)

Photograph/slide taken? ☒ yes ___ no If yes, will a copy be submitted to Heritage? ☒ yes ___ no MNFI office: Added to collection? ___ (check)Specimen collected? ☒ yes ___ no Collection # and repository: 760, University of Michigan Herbarium (MICH)Identification problems? ___ yes ☒ no If necessary, describe the important plant characteristics you used for identification: Flowers/fruit in axils of foliage leaves; no terminal inflorescences, leaves often subopposite, and totally limp upon removal from water, as described in Michigan Flora Part II (Voss 1985).

SIZE AND PHENOLOGY

Size is a quantitative measure of the area and/or abundance of an occurrence. Components of this factor are 1) area of occupancy, 2) population abundance, 3) population density and 4) population fluctuation.

Abundance (total size of the occurrence):

Type of measurement (check one)

Ramets (total # of individuals): probably >1000 ___ precise count ☒ estimate# Genets (total # of groups): could be as few as one genetic unit. ___ precise count ☒ estimatePopulation density (i.e., widely scattered, dense clumps, evenly distributed throughout): Appears from shore as scattered, rather dense clumps covering roughly 20% of bottom of this approximately 180 m² pool.Area of occupancy (fill in one): 36 meters² ___ yards ___ acres Type of measurement (check one): ___ Precise ☒ Estimate

Phenology: Indicate the number observed in each category (or check if numbers are unknown):

☒ in leaf ___ in bud ☒ in flower ☒ immature fruit ☒ mature fruit(?) ___ seed dispersing ___ dormant ___ seedlings

ASSOCIATED SPECIES

Ground cover: 750% (rough estimate)Chara spp.Potamogeton gramineusUtricularia minorNuphar variegataAround shallow margin of poolPrimarily:Glyceria borealisPuccinellia fernaldiiHypericum borealeSparganium chlorocarpumJuncus brevicaudatusWetland/pond edge (partial list)Calamagrostis canadensisScirpus cyperinusCarex cryptolepisCarex michauxianaCarex lasiocarpaGentiana linearis (scattered)Overstory/Tree Species: (___ % cover) N/A

CONDITION:

Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the occurrence, and the degree to which they affect the continued existence of the occurrence. Components of condition for species are: 1) reproduction and health, 2) ecological processes, 3) species composition and biological structure, 4) abiotic physical/chemical factors. Factors to consider: evidence of regular successful reproduction, habitat degradation, disturbance, presence of exotic species, the degree to which ecological processes are sustaining the habitat. Where possible include a comparison to other occurrences.

BIOLOGY and REPRODUCTION

EVIDENCE OF REPRODUCTION? ☒ yes ___ no ___ unknown Explain: Maturing (and perhaps mature) fruit common in axils of leaves of shoots.EVIDENCE OF DISEASE OR PREDATION: None evident.ANIMAL POLLINATORS observed on the plant (list species): None noted.Do other members of this genus or look-alike plants co-occur at this survey site? ___ yes ☒ no If yes, list the species: _____

CONDITION (continued)

HABITAT DESCRIPTION: Describe the specific habitat or micro habitat where this plant occurs. Convey a mental image of the habitat and its features including: land forms, aquatic features, vegetation, slope, aspect, soils, associated plant and animal species, natural disturbances.

The *Myriophyllum farwellii* inhabits a side pool of Mulligan Creek, a small, permanent stream. The pool is bordered primarily by mostly open, botanically diverse, boggy sedge meadow. A 2-3 meter high rock outcrop borders the east side of the pool. From a brief and careful wade into the pool (by SG) to collect a specimen, the pool has a maximum depth of 1 meter or more. The bottom is composed of large rocks covered with several decimeters of loose silt and organic matter. The water is dark with tannins, blocking much of the bottom from view.

Chara spp. apparently covers much of the bottom of the pool, though little *Chara* is visible from the surface. *Myriophyllum farwellii* appears to be the most abundant vascular plant in the pool. Associated vascular plant cover is relatively sparse.

The pH on the east side of the pool just after noon on this sunny day was 5.93.

LANDSCAPE CONDITION: Describe the condition of the landscape surrounding the elements habitat (i.e., farmland, residential area, pristine forest)

Except for the 2-track road roughly 70 meters west of the site, the surrounding landscape consists of nearly pristine northern hardwood-conifer forest and wetlands.

CURRENT THREATS to this occurrence (i.e., grazing, logging, mining, plantations, ATVs, dumping, etc.) Discuss exotics in the next section.

None evident at present.

POTENTIAL THREATS to this occurrence: A consortium of Kennecott Mining, timber and other corporate interests have formed "Woodland Road LLC", which plans to build a paved, 2-lane industrial

EXOTICS PRESENT? ☐ yes ☒ no. ~~Construction would fill wetlands and deposit silt into the creek, just upstream from the site. Road salt, rock dust, heavy metals, and chemical spills are long-term threats.~~

PAST IMPACTS to the occurrence (i.e., logging, , etc.): Past impacts to the watershed presumably include erosion and siltation from sporadic logging and construction (many years ago) of the existing 2-track road and narrow bridge.

TOPOGRAPHY Elevation: <u>≈ 1668</u> ft. If elevation is a range: Minimum: _____ ft. Maximum: _____ ft.	Aspect: <input type="checkbox"/> N <input type="checkbox"/> NE <input type="checkbox"/> E <input type="checkbox"/> NW <input type="checkbox"/> S <input type="checkbox"/> SE <input type="checkbox"/> W <input type="checkbox"/> SW <u>flat</u>	Slope: <input checked="" type="checkbox"/> flat <input type="checkbox"/> 0-10 <input type="checkbox"/> 10-35 <input type="checkbox"/> 35+ <input type="checkbox"/> vertical	Light: <input checked="" type="checkbox"/> open <input type="checkbox"/> partial <input type="checkbox"/> filtered <input type="checkbox"/> shade	Position: <input type="checkbox"/> crest <input type="checkbox"/> upper slope <input type="checkbox"/> mid slope <input type="checkbox"/> lower slope <input type="checkbox"/> bottom <u>N/A</u>	Moisture: <input checked="" type="checkbox"/> Inundated <input type="checkbox"/> saturated (wet-mesic) <input type="checkbox"/> moist (mesic) <input type="checkbox"/> dry-mesic <input type="checkbox"/> dry (xeric)
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MANAGEMENT AND PROTECTION

MANAGEMENT, MONITORING AND RESEARCH NEEDS for this occurrence (e.g. burn periodically, open the canopy, ensure water quality, control exotics, keep out the ATVs, study effects of browsing)

Erosion and siltation from the poorly-maintained 2-track road should be controlled. Because of the altered hydrology, siltation, and chemical contamination certain to occur during its construction and heavy use, an industrial haul road should not be built.

AREAS IN NEED OF PROTECTION: (e.g. the entire marsh, the slope and crest of slope, the fen and upland, etc.) The creek, pool, and surrounding wetlands and forests should be protected.